

REMARKS

Claims 1-6 and 9-19 are pending. Applicants respectfully submit no new matter is presented therein.

Claims 1-6 and 9-19 Recite Patentable Subject Matter

Claims 1-6 and 9-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,667,647 to Suga et al. (hereinafter "Suga") in view of U.S. Patent No. 4,311,569 to Dempsey et al. (hereinafter "Dempsey"), and further in view of U.S. Patent No. 5,401,371 to Oshima et al. (hereinafter "Oshima"). Applicants respectfully traverse the rejection.

Pending claim 1 recites a water electrolytic apparatus including a plurality of water electrolytic cells each having a solid polymer electrolyte membrane, a plate shaped anode, and a plate shaped cathode, wherein the anode and the cathode are arranged on opposite sides of and separated from the electrolyte membrane by a current collector, respectively, the water electrolytic cells being developed on a hypothetical plane and electrically connected in series to one another, wherein each of the water electrolytic cell, the solid polymer electrolyte membrane, the anode, and the cathode are developed on respective hypothetical planes that extend parallel to one another and the anode and cathode have a uniform thickness throughout.

Pending claim 9 recites a water electrolytic apparatus including a plurality of water electrolytic cells each having a solid polymer electrolyte membrane, a plate shaped anode, and a plate shaped cathode, wherein the anode and the cathode are arranged on opposite sides of and separated from the electrolyte membrane by a

current collector, respectively, the water electrolytic cells being developed on a hypothetical plane and electrically connected in series to one another, wherein the solid polymer electrolyte membranes, the anodes, and the cathodes of the water electrolytic cells are developed on respective common hypothetical planes that extend parallel to one another and the anode and cathode have a uniform thickness throughout.

Pending claim 15 recites a water electrolytic apparatus including a plurality of water electrolytic cells each having a solid polymer electrolyte membrane, a plate shaped anode, and a plate shaped cathode, wherein the anode and the cathode are arranged on opposite sides of and separated from the electrolyte membrane by a current collector, respectively, each of the water electrolytic cells is developed on a common hypothetical plane such that each of the water electrolytic cells are disposed side by side and electrically connected in series to one another.

Applicants respectfully note pending claims 1, 9, and 15 each recite, among other features, the electrolytic cells are electrically connected to one another and the plate shaped cathodes and anodes of each electrolytic cell are arranged on opposite side of and separated from the electrolyte membrane by a current collector. Applicants respectfully submit one of ordinary skill in the art would readily know and understand that the current collector recited by the pending claims collects electricity.

The Office Action admits the Suga and Dempsey combination does not teach or suggest a current collector separating the anode and cathode from the electrolyte membrane. However, to overcome the admitted deficiency of the Suga/Dempsey combination, the Office Action argues Oshima teaches, in Figure 2, a “current” collector

(28, 29, 36, and 37, wherein collectors 28, 29 act as one major collector, and 36, 37 act as another major collector) disposed between the electrolyte membrane and both the anode 35 and cathode 27. Further, the Office Action states it would have been obvious to one of ordinary skill in the art to modify the Suga/Dempsey combination to incorporate the “current” collector taught by Oshima.

Applicants respectfully disagree with the statement proffered by the Office Action in support of the supposed modification to the Suga/Dempsey combination as Oshima does not teach or suggest the collectors as being “current” collectors in the sense they collect electricity.

Rather, as specifically explained in column 8, lines 32-48 of Oshima, the “collectors” 28, 29 in the hydrogen generator chamber 18 side of the Oshima generator generate the hydrogen gas within the chamber 18. Similarly, the “collectors” 36, 37 in the oxygen generator chamber 19 side of the Oshima generator generate oxygen with the chamber 19. Nowhere does Oshima describe, teach, or suggest the collectors 28, 29 and/or 36, 37 as being “current” collectors wherein the collectors collect electricity. If the Examiner is aware of such a teaching or suggestion, the Applicants respectfully request the Examiner identify the portions of Oshima that provide such.

Moreover, Applicants note the Office Action states Suga discloses an electrolytic apparatus having a plurality of electrolytic cells developed on a hypothetical plane with an ion exchange film (3), electrodes (7) of positive (anode) and negative (cathode) poles vertically oriented on a horizontal plane. Applicants respectfully note claims 1, 9, and 15 recite the cells, in addition to being parallel to the hypothetical plane, are also

connected in series to each other. The Office Action notes Figure 3 of Suga illustrates a plurality of cells connected in series to each other. Applicants respectfully submit that if the hypothetical plane is parallel to the ion exchange film (3) of Figures 1-2, then the cells of Figure 3, which are connected in series to one another, cannot be parallel to, or developed on, the hypothetical plane as the cells are perpendicular to the hypothetical plane and film (3). As such, Applicants respectfully submit Suga does not disclose or suggest cells that are connected in series to each other wherein the anode, cathode, and electrolyte membrane are parallel to a hypothetical plane since Figure 3 of Suga clearly shows the anode and cathode of each cell as being perpendicularly arranged relative to the film (3) and hypothetical plane therebetween.

To establish *prima facie* obviousness, each feature of a rejected claim must be taught or suggested by the applied art of record. See M.P.E.P. §2143.03 and *In re Royka*, 490 F.2d 981 (CCPA 1974). As explained above, Suga, Dempsey, and Oshima, alone or in combination, do not teach or suggest each feature recited by pending claims 1, 9 and 15. Accordingly, for the above provided reasons, Applicants respectfully submit that pending claims 1, 9, and 15 are not rendered obvious under 35 U.S.C. § 103 by Suga, Dempsey, and Oshima. Therefore, claims 1, 9 and 15 should be deemed allowable.

Claims 2-6 depend from claim 1. Claims 10-14 depend from claim 9. Claims 16-19 depend from claim 15. Applicants respectfully submit that these fourteen (14) dependent claims should be deemed allowable for the same reasons claims 1, 9, and 15 as well as for the additional subject matter recited therein.

Applicants respectfully request withdrawal of the rejections

Claims 1-6 and 9-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,667,647 to Suga et al. (hereinafter "Suga") in view of U.S. Patent No. 5,401,371 to Oshima et al. (hereinafter "Oshima"). Applicants respectfully traverse the rejection.

As stated above, Applicants respectfully note pending claims 1, 9, and 15 each recite, among other features, the electrolytic cells are electrically connected to one another and the plate shaped cathodes and anodes of each electrolytic cell are arranged on opposite side of and separated from the electrolyte membrane by a current collector. Applicants respectfully submit one of ordinary skill in the art would readily know and understand that the current collector recited by the pending claims collects electricity.

The Office Action admits the Suga does not teach or suggest a current collector separating the anode and cathode from the electrolyte membrane. However, to overcome the admitted deficiency of the Suga, the Office Action argues Oshima teaches, in Figure 2, a "current" collector (28, 29, 36, and 37, wherein collectors 28, 29 act as one major collector, and 36, 37 act as another major collector) disposed between the electrolyte membrane and both the anode 35 and cathode 27. Further, the Office Action states it would have been obvious to one of ordinary skill in the art to modify Suga to incorporate the "current" collector taught by Oshima.

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respectfully submit Suga does not disclose or suggest cells that are connected in series to each other wherein the anode, cathode, and electrolyte membrane are parallel to a hypothetical plane since Figure 3 of Suga clearly shows the anode and cathode of each cell as being perpendicularly arranged relative to the film (3) and hypothetical plane therebetween.

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Claims 2-6 depend from claim 1. Claims 10-14 depend from claim 9. Claims 16-19 depend from claim 15. Applicants respectfully submit that these fourteen (14) dependent claims should be deemed allowable for the same reasons claims 1, 9, and 15 as well as for the additional subject matter recited therein.

Applicants respectfully request withdrawal of the rejections

Conclusion

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of claims 1-6 and 9-19, and the prompt issuance of a Notice of Allowability are respectfully solicited.

U.S. Patent Application Serial Number 09/804,083
Attorney Docket Number 107348-00096

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing attorney docket number 107348-00096.**

Respectfully submitted,
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